

**OCCUPATIONAL SAFETY
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Attachment No. 2

FINAL STATEMENT OF REASONS**CALIFORNIA CODE OF REGULATIONS**

TITLE 8: Chapter 4, Subchapter 7, Article 59, Section 4324
of the General Industry Safety Orders

Dust Collection Systems for Woodworking Machines**MODIFICATIONS AND RESPONSE TO COMMENTS RESULTING FROM
THE 45-DAY PUBLIC COMMENT PERIOD**

There are no modifications to the information contained in the Initial Statement of Reasons except for the following sufficiently related modifications that are the result of public comments and/or Board staff evaluation.

Section 4324 Dust Collection Systems.**Subsection (c)(4)(B)**

The original proposal would prohibit locating enclosureless dust collectors (EDCs) indoors when they are used for sanders and abrasive planners with mechanical feeds. The revised proposal would allow certain types of mechanical feeds when they are used in a manner that does not create a hazard. The modified proposal would add an exception to subsection (c)(4)(B) which would allow the use of mechanical feeds such as rubber belts when they are used with machines that are equipped with an electronic load sensor that automatically shuts off the feed device when overloading occurs. The modification is necessary to allow the use of mechanical feeds under conditions that prevent a machine from being overloaded and possibly causing a fire in the dust collection system.

Subsections (c)(4)(F) through (H)

The original proposal contains an exception that exempts EDCs less than 1500 cubic feet per minute (cfm) from the provisions of subsections (c)(4)(F) and (G), which prohibit an EDC within 20 feet of the nearest emergency egress route, employee workstation, or another EDC located in the same room. This exception was added to the proposal because employer representatives and other stakeholders asserted during the advisory committee that most facilities did not have enough floor space to provide a 20 foot separation distance between EDCs and workstations, EDCs and emergency egress routes, and multiple EDCs in the same room. The revised proposal

would prohibit locating an EDC next to an emergency exit and limits the number of EDCs that can be located within 20 feet of an emergency egress route, employee workstation, or each other. The modified proposal places the provisions regarding the proximity of EDCs to workstations, emergency egress routes, and other EDCs into three separate subsections with a specific exception for each subsection. The exemptions would only apply to EDCs with an air-handling capacity of 1500 cfm or less. The exemptions would clarify that: 1) one 1500 cfm EDC may be within 20 feet of an emergency egress route provided it is not within 10 feet of an emergency exit, 2) one 1500 cfm EDC may be within 20 feet of an employee workstation, and 3) a maximum of two 1500 cfm EDCs may be within 20 feet of each other in the same room. The proposed amendment is necessary to reduce potential employee exposure to flames from EDCs in the event of a fire.

Subsection (d) Bonding and grounding of ducts.

The original proposal would require that ducts and flexible hoses used to convey air and material as part of a dust collection system be constructed of metal or other conductive material. The proposed revision adds text which would require ducts and flexible hoses to be grounded and would also permit the use of non-conductive, non-grounded, flexible ducts not exceeding the minimum length necessary for machine operation. The purpose of the revised proposal is to clarify that conductive ducts and flexible hoses shall be grounded and that non-conductive ducts such as PVC pipe shall not be used. The revised text is necessary to prevent the accumulation of static electricity, which could ignite the combustible wood dust in the dust collection system while allowing the use of non-conductive flexible ducts for final machine connection in the minimum length needed for machine operation, as permitted by the National Fire Protection Association (NFPA) 664.

Subsection (e) Guards and collection hoods.

The initial proposal states “where a dust collection system is used, the guard shall form part or all of the collection hood and shall be constructed of a suitable solid material of a thickness not less than that specified in Section 3942.” The guard materials and thicknesses specified by Section 3942 are not at least as effective as the guarding requirements for woodworking machines in federal 29 CFR 1910.213 because Section 3942 contains general, minimum guarding requirements for power transmission equipment, prime movers, machines and machine parts. The standards in Article 59 contain guarding requirements for specific woodworking machines, which parallel the federal requirements in 29 CFR 1910.213. The proposed revision would delete the text relating to guard materials and thicknesses, including the reference to Section 3942 because it is not necessary for Section 4324, which pertains to exhaust systems, to reference other sections in Article 59 that contain guarding requirements. The revision is necessary to avoid creating any potential conflicts between federal and state guarding requirements for woodworking machines.

Summary and Response to Oral and Written Comments:

Mr. Christopher Lee, Acting Regional Administrator, Region IX, OSHA, U.S. Department of Labor, by letter received December 7, 2006.

Comment: Mr. Lee states that the proposed standard requires additional levels of protection consistent with NFPA 664-2002 not currently found in the Federal Woodworking Standards. However, Federal OSHA is concerned with subsection 4324(e) which states “where a dust collection system is used, the guard shall form part or all of the collection hood and shall be constructed of a suitable solid material of a thickness not less than that specified in Section 3942.” Mr. Lee states that the guard materials and thicknesses specified by Section 3942 are not at least as effective as the guarding requirements for woodworking machines in 29 CFR 1910.213.

Response: The comment is correct in that Section 3942 contains general, minimum guarding requirements for power transmission equipment, prime movers, machines and machine parts. The standards in Article 59 contain specific guarding requirements for various types of woodworking machines. These guarding requirements parallel the federal requirements in 29 CFR 1910.213. The Board concludes it is not necessary for Section 4324, which is intended to address dust collection systems, to reference the guarding requirements in other Article 59 standards. Therefore, to avoid creating any potential conflicts between federal and state guarding requirements for woodworking machines, the Board proposes to modify subsection (e) to delete text relating to guard materials and thicknesses, including the reference to Section 3942.

Mr. Ric Morrison, Production Coach, Sunset Molding Company, by email dated November 27, 2006.

Comment #1. Mr. Morrison states that the proposal holds the woodworking industry to a higher standard than other industries in regards to dust collection systems. He states that he is not aware of any other standards that deal with the control of static electricity even though other materials present more of a static electricity ignition hazard than wood.

Response: The control of static electricity as a potential ignition source for combustible dust is addressed in Section 5174, Combustible Dusts – General. This section requires that all machines, conveyors, housings, and conductive surfaces in locations where combustible dusts are generated or are present shall be electrically bonded to ground to prevent the accumulation of electrostatic charges which are sufficient to potentially cause dust ignition. It further requires that hoses and nozzles used in the collection or blowing of dusts shall have electrical continuity maintained along the entire length from coupling to nozzle and shall be bonded to ground.

Comment #2. Mr. Morrison proposes to add the following underlined text to the end of proposed new subsection (d) as follows:

“(d) Bonding and grounding of ducts. Ducts and flexible hoses used to convey air and material as part of dust collection systems shall be constructed of metal or other conductive material and

shall be grounded. In cases where non-conductive, flexible duct is used to allow machine adjustment, the non-conductive, non-grounded, flexible duct shall not exceed one foot more than the minimum length required to connect it to grounded equipment and a grounded dust collection system.”

Response: The Board is amending subsection (d) to specifically require grounding, prohibit non-conductive duct materials such as PVC, and provide an exemption which would allow the use of non-conductive flexible duct for final machine connection in the minimum length necessary for machine operation. These modifications incorporate the commenter’s proposed changes and are consistent with NFPA 664.

The Board thanks Mr. Morrison for his comments and participation in the rulemaking process.

II. Oral Comments Received at the Public Hearing on December 14, 2006

Mr. Bruce Wick, V.P. Risk Management, California Professional Association of Specialty Contractors

Comment: Mr. Wick expressed his appreciation and support for the proposal, which would allow the use of this type of dust collector indoors; however, he believes there should be some allowance for mechanical feeds on sanders and abrasive planers due to ergonomic and other issues.

Response: Some mechanical feeds on sanders and abrasive planers can, under certain operating conditions, “overload” a machine and cause excessive friction between the abrasive material and the wood. The increased friction generates heat which can ignite the wood dust and cause a fire in the dust collection system. The Board agrees with Mr. Wick’s premise that a mechanical feed that is designed and operated in a manner that prevents overloading of an abrasive sander or planer does not increase the risk that a fire will occur in an indoor dust collector. Therefore, the Board is modifying the proposal to add an exception to subsection (c)(4)(B) which would allow the use of rubber belt type mechanical feeds that: 1) do not have a mechanism capable of forcing wood through an overloaded machine, and 2) are used with a machine equipped with an electronic load sensor that automatically shuts off the feed device if overloading occurs.

The Board thanks Mr. Wick for his comment and participation in the rulemaking process.

Mr. Larry McCune, Principal Safety Engineer, Division of Occupational Safety and Health

Comment: Mr. McCune stated that following the advisory committee meeting there was an exception inserted into Section 4324(c)(4)(G) allowing multiple dust collectors to be installed in an exit passageway. He also stated that there is no limit on the number of 1500 cubic feet per minute (cfm) dust collectors that can be installed in close proximity to each other. The Division feels that the proposal should be modified further to protect exits because these dust collectors do ignite on occasion. Although they do not constitute an explosion risk, a ball of fire that is approximately 20 feet in diameter can be generated by an enclosureless-type dust collector. Mr.

McCune stated that the Division discussed this issue with the committee chairman of the NFPA 664 standard and the chairman indicated that the number of dust collectors that could be installed in an exit way or in a workplace was a concern.

Response: The Division's comment pertains to an exception that exempts enclosureless dust collectors (EDCs) that are 1500 cfm or less from the provisions of subsections (c)(4)(F) and (G), which prohibit an EDC within 20 feet of the nearest emergency egress route, employee workstation, or another EDC located in the same room. This exception was added to the proposal because employer representatives and other stakeholders asserted during the advisory committee that most facilities did not have enough floor space to provide a 20 foot separation distance between EDCs and workstations, EDCs and emergency egress routes, and multiple EDCs in the same room.

As a result of discussions with Mr. McCune, Board staff concludes the exemption should be modified to prohibit locating an EDC next to an emergency exit and limit the number of EDCs that can be located within 20 feet of an emergency egress route, employee workstation, or each other. Therefore, the Board is modifying the proposal to place the provisions regarding the proximity of EDCs to workstations, emergency egress routes, and other EDCs into three separate subsections with a specific exception for each subsection. The exemptions would only apply to EDCs with an air-handling capacity of 1500 cfm or less. The exemptions would clarify that: 1) one 1500 cfm EDC may be within 20 feet of an emergency egress route provided it is not within 10 feet of an emergency exit, 2) one 1500 cfm EDC may be within 20 feet of an employee workstation, and 3) a maximum of two 1500 cfm EDCs may be within 20 feet of each other in the same room.

The Board believes the proposed modification addresses the concerns of the commenter and provides employers with the flexibility needed to comply with the required separation distances.

MODIFICATIONS AND RESPONSE TO COMMENTS RESULTING FROM THE 15-DAY NOTICE OF PROPOSED MODIFICATIONS

As a result of written comments to the proposed modifications contained in the 15-Day Notice of Proposed Modifications mailed on May 4, 2007, the following sufficiently related modifications have been made to the Informative Digest published in the California Regulatory Notice Register dated October 27, 2006.

Section 4324 Dust Collection Systems.

Subsection (c)(4)(B)

The original proposal would prohibit locating enclosureless bag-type dust collectors indoors when they are used for sanders and abrasive planners with mechanical feeds. In response to comments received during the 45 day comment period, the original proposal was modified to add an exception that would allow mechanically fed sanders and planers when the feed device is not constructed of metal, which could create sparks if contacted by the abrasive belt, and the sander

or planer is equipped with an electronic load sensor that automatically shuts off the feed device if overloading occurs. In response to comments resulting from the 15-Day Notice of Proposed Modifications further revisions to the exception were proposed. The proposed revisions would allow sanders and abrasive planers with mechanical feeds that meet all of the following conditions: 1) No more than one sander or planer is connected to the same enclosureless bag-type dust collector, 2) The sander or planer is equipped with a cut limiting device that is set to prevent stock from being fed into the sander or planer if the thickness of the stock would cause the machine to make a cut that is deeper than can be safely accomplished without causing excessive friction and without causing burning of the wood or wood dust, 3) The sander or planer is equipped with an emergency shutoff for operator use that shuts off the mechanical feed and the abrasive belt which shall be equipped with a brake that stops the belt when the emergency shutoff is activated, 5) A machine operator shall hand feed stock into the mechanical feed, visually inspect the stock for any metal objects which shall be removed before feeding the stock into the machine, and shall be in close proximity to the machine to monitor the operation and activate the emergency stop when necessary. The proposed revisions are necessary because the use of electronic load sensors is not feasible and the conditions of the revised exception provide broad protection from potential fire hazards associated with the use of sanders and abrasive planers with mechanical feeds.

Summary and Response to Written Comments

Summary and Response to Written Comments to the 15-Day Notice of Proposed Modifications Mailed on May 4, 2007.

Mr. Mike Mendenhall, California Woodworking Machinery, by letter received May 24, 2007.

Comment No 1: Mr. Mendenhall states that he is unaware of any sanders or planers equipped with a load sensing device that limits the heat generated by a sanding belt and that such a shut off device is not feasible.

Response: The Board concurs and has amended the exception to subsection (c)(4)(B) to delete the requirement for a load sensor that automatically shuts off the feed device when overloading occurs.

Comment No 2: It is standard in the woodworking industry for mechanically fed abrasive sanders and planers to have an operator feeding the machine, have emergency shutoffs for operator use in case of overloading, and have cut limiting devices.

Response: The Board concurs and has amended the exception to subsection (c)(4)(B) to add conditions which would require machines to be equipped with a cut limiting device and an emergency shutoff for operator use. In addition, the proposed modification would require the machine operator to hand feed stock into the machine. The Board thanks Mr. Mendenhall for his comments and participation in the rulemaking process.

Mr. Ric Morrison, Production Coach, Sunset Moulding Company, by email sent May 9, 2007.

Comment No 1: Mr. Morrison states that if a friction fire due to a jam-up of material being fed occurs, the majority of the fires will come from the abrasive belts, not the drive system. He does not believe the type of material the driving system is made of will make any difference to this primary cause of a friction fire.

Response: The Board concurs and has amended the exception to subsection (c)(4)(B) to delete the condition which specifies that mechanical feed devices shall be a rubber belt type, and not equipped with metal rolls, pawls, chains, tracks or similar mechanisms.

Comment No 2: The condition in the exception to subsection (c)(4)(B), which specifies that a machine must be equipped with an electronic load sensor that shuts off the machine when overloaded, lacks clarity and may not be effective.

Response: The Board concurs and has deleted the requirement as noted in the response to Mr. Mendenhall's comment no 1. The Board thanks Mr. Morrison for his comments and participation in the rulemaking process.

Mr. Bruce Wick, Director of Risk Management, California Professional Association of Specialty Contractors, by email dated May 23, 2007.

Comment No 1: Mr. Wick requests that the exception to subsection (c)(4)(B) be amended to allow vinyl as well as rubber feeds, while maintaining the prohibition on metal feed devices.

Response: For the reasons discussed in the Board's response to Mr. Morrison's comments, the Board amended the exception to delete all specifications for the types of feed devices that are allowed to be used with abrasive sanders and planers. The proposed modification would allow vinyl feed devices as requested by the commenter.

Comment No 2: Mr. Wick requests that the exception to subsection (c)(4)(B) be amended to delete the requirement that machines be equipped with a load sensor that automatically shuts off the feed device when overloading occurs. Mr. Wick states that such devices are not available or feasible for medium level machines and would not avoid the risk of a fire igniting. Mr. Wick also notes that these types of machines have an operator doing the insertion of the wood piece into the mechanical feed, so an operator is in very close proximity to the machine and has the ability to manually shut off the device.

Response: The Board concurs and has amended the exception consistent with his comments and similar comments from Mr. Mendenhall, as described in the Board's response to Mr. Mendenhall. The Board thanks Mr. Wick for his comments and participation in the rulemaking process.

MODIFICATIONS AND RESPONSE TO COMMENTS RESULTING FROM
THE SECOND 15-DAY NOTICE OF PROPOSED MODIFICATIONS

No further modifications to the information contained in the Initial Statement of Reasons are proposed as a result of the second 15-day Notice of Proposed Modifications mailed on July 6, 2007.

Summary and Response to Written Comments:

No written comments were received.

ADDITIONAL DOCUMENTS RELIED UPON

None.

ADDITIONAL DOCUMENTS INCORPORATED BY REFERENCE

None.

DETERMINATION OF MANDATE

This standard does not impose a mandate on local agencies or school districts as indicated in the Initial Statement of Reasons.

ALTERNATIVES CONSIDERED

The Board invited interested persons to present statements or arguments with respect to alternatives to the proposed standard. No alternative considered by the Board would be more effective in carrying out the purpose for which the action is proposed or would be as effective and less burdensome to affected private persons than the adopted action.